Alaska Park Science

National Park Service Alaska Support Office 240 W. 5th Avenue Anchorage, Alaska 99501



Cindy Williams, an undergraduate anthropology student at University of Alaska Anchorage, searches for small artifacts.

Top-Right: Black chert at a prehistoric chert quarry on Wrench Creek.



Alaska Park Science

National Park Service
U.S. Department of Interior

Alaska Support Office Anchorage, Alaska





Table of Contents

Beringia: Visions of an International Park in Difficult Times	_ 5
Cycles in the Forest: Mammals, Mushroom Mycophagy, Mycoses and Mycorrhizae	
Ancient Hunters of the Western Brooks Range: Integrating Research and Cultural Resource Management	_ 21
High Latitude Marine Reserve Research in Glacier Bay National Park	_ 27
Science News32	2-39

ISSN 1545-4967

Alaska Park Science

http://www.nps.gov/akso/AKScienceWinter2003.pdf

Editor: Monica Shah
Copy Editor: Thetus Smith

Project Lead: Robert Winfree, Regional Science Advisor,

email: robert_winfree@nps.gov

Park Science Journal Board:

Ted Birkedal, Team Leader for Cultural Resources

Don Callaway, Cultural Anthropologist

Alex Carter, Team Manager for Biological Resources Team

Joy Geiselman, Deputy Chief, Biological Science Office USGS Alaska Science Center

John Morris, Education Coordinator

John Quinley, Assistant Regional Director

for Communications

Jane Tranel, Public Affairs Specialist

Ralph Tingey, Associate Regional Director

for Resources and Education

Robert Winfree, Regional Science Advisor

and Chair of Journal Board

Funded By: The Natural Resources Challenge Initiative

Produced in cooperation with the

Alaska Natural History Association and Galaxy Graphics

Printed with soy based ink

Noatak National Preserve Cape Krusenstern Caribou Crossing Site National Monument Kobuk Valley Kivalina ** National Park Noatak Kotzebue Bering Land Bridge ALASKA National Preserve Norton Sound Denali National Park and Preserve Bristol Bay Gulf of Alaska

Parks Featured in this Issue

Glacier Bay

National Park and Preserve

Cover photograph © U.S. Geological Survey



Alexander G. Andrews is a biological technician for the Glacier Bay Field Station, U.S. Geological Survey.

Don Callaway is a cultural anthropologist for the Alaska Support Center, National Park Service.

Maggie Hallam is a student in biology and a biological illustrator, University of Alaska Fairbanks.

Dr. Gary A. Laursen is a professor of mycology at the Institute of Arctic Biology, University of Alaska Fairbanks.

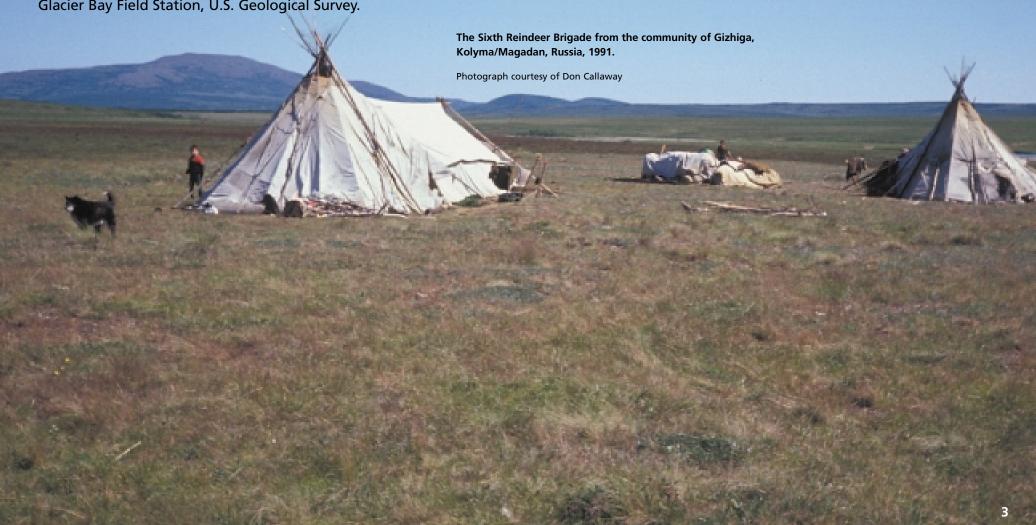
Jennifer Mondragon is an ecologist for the Glacier Bay Field Station, U.S. Geological Survey.

Julie K. Nielsen is a graduate student at the School of Fisheries and Ocean Sciences, University of Alaska Fairbanks.

Jeff Rasic is an archeologist for Gates of the Arctic National Park and Preserve and Yukon-Charley Rivers National Preserve.

Dr. Rodney D. Seppelt is a principal scientist (bryology) for the Australian Antarctic Division.

Dr. Spencer J. Taggart is a research ecologist for the Glacier Bay Field Station, U.S. Geological Survey.





Beringia: Visions of an International Park in Difficult Times

by Donald Callaway

Introduction

In 1990 Presidents Gorbachev and Bush signed an agreement to initiate the establishment of an international park in the Bering Sea region to recognize the common cultural and natural heritage of Beringia. This international park would combine units of the U.S. national park system in Alaska, specifically Bering Land Bridge National Preserve, Cape Krusenstern National Monument, Noatak National Preserve, and Kobuk Valley National Park with Russian units that have yet to be designated.

The U.S. National Park Service's Shared Beringian Heritage Program was established shortly after the agreement was signed. The program encourages the participation of local residents in the preservation and understanding of natural resources and protected lands, as "well as working to sustain the cultural vitality of Native peoples in the Central Beringia region" (NPS n.d.).

Since its inception, the Shared Beringian Heritage Program has funded projects that: ...help link protected lands and the peoples of both sides of the Bering Strait in cultural exchanges, and in exchanges of scientific capabilities and findings, conservation ethics and philosophies, and natural and cultural resource management technologies (NPS n.d.).

One such project was the "Beringia: Chukotka Subsistence Harvest Assessment Project" (BCSHAP), which was a cooperative effort funded by the National Park Service, the North Slope Borough (NSB), and the office of the Governor of Chukotka, Roman Abramovitch. This project documented the current social, economic, and traditional subsistence activities of three Chukotkan communities, Lavrentiya, Lorino, and Sireniki, and used this data to prepare a needs assessment report that was submitted to the International Whaling Commission (IWC).

This project was not simply an academic exercise. The IWC regulates all whale harvests, and its approval of a quota is essential for indigenous whaling communities in Alaska and critical to the stability of indigenous communities in Chukotka. Economic conditions had deteriorated so badly in Chukotka that the survival of many families depended on the harvest of wildlife resources, especially gray whales and other marine mammals. The technical needs assessment paper produced by this

Beringian research was presented to the IWC in Shimonoseki, Japan in 2001. Based on the results of this assessment, the IWC granted the communities of Chukotka a quota of 120 gray whales per year to continue their indigenous subsistence activities.

Historic Background

For several hundred years the indigenous communities on both sides of the Bering Strait have been linked through a number of economic and social institutions. Trade, social contacts, and warfare have been documented by numerous sources including the records of the Jesup expedition, Chukchi and Eskimo oral histories, and the materials and artifacts collected on both sides of the strait (*Gurvich 1988*). Tobacco, beads, and iron were traded from Siberia to Alaska where they were exchanged for furs, jade, and ivory.

During more recent periods, the interchange and contact has been more intimate, such as between the contemporary Siberian Yupik communities of Gambell (Alaska) and New Chaplino (Chukotka). Separated by only 64 kilometers of water, these two communities had been linked for centuries through intermarriage (sharing the same clan system), trade, and ceremo-



In Chukotka, survival of many families depends on the harvest of wildlife resources, especially gray whales.

Left: The Soviet policy of abandoning "settlements without prospects," has led to the abandonment of many traditional communities. Migration by families from these settlements to larger communities has resulted in increased rates of social problems and has had serious detrimental consequences for the organization of traditional subsistence activities.

Photograph courtesy of Don Callaway



While traditional forms of harvest and distribution faced severe dislocations under the management of state farms, certain skills such as skin boat building were maintained. (Sireniki 1992)

nial exchanges. In the last 70 years, these two communities are representative of the dramatic and traumatic social and political changes that have swept through the Bering Straits region (Callaway and Pilyasov 1993). The Chukotka side has seen substantial changes as indigenous systems of reindeer herding and marine mammal hunting have been collectivized, turned into state farms, and finally all but fiscally abandoned after the collapse of the Soviet system.

Since the 1930s these two small Native communities have encountered enormous changes, changes often engendered by the social and economic policies of the nation states in which they are embedded. The abandonment of small Native communities in Chukotka under the Soviet policy of "settlements without prospects," the forced resettlement of Chaplino to New Chaplino,

and the reorganization of cooperatives into state farms have all had serious detrimental consequences for the organization of traditional subsistence activities in the small communities within this region.

Across the strait, Gambell, like many indigenous communities in the Alaska arctic, has very little economic infrastructure, high unemployment, increased social problems, and decreasing financial support from the state and federal sector. In contrast to Chukotka and despite some constraints caused by state and federal management of natural resources, much of rural Alaska has managed to maintain high levels of subsistence use. On St. Lawrence Island and in the Yukon-Kuskokwim delta, indigenous languages are spoken by young people (although this is less true in Inupiaq-speaking communities). On St. Lawrence Island

important cultural features such as sharing, bride service, patri-clans, and ivory carving have been maintained while these same institutions were severely threatened in most Chukotkan communities, at least until the late 1990s.

For Chukotka the most dramatic short terms impacts came during the period of the Soviet state farms (circa 1975 - to about 1995). Central Russians and others, drawn by the prospect of high wages (regular salaries augmented by cost of living adjustments) and available housing, became the administrators of the state farms and reorganized existing marine mammal hunting practices. A factory boat that delivered whales to the communities replaced traditional whaling crews. Walrus crews formerly organized along kinship lines were now replaced by "brigades" headed by European Russians. Access to the means of production, such as boats and guns, was severely restricted by the concerns and policies of the Border Guard.

Traditional forms of harvest and distribution faced severe dislocations as the



Traditional ivory carving was sustained in only a few Chukotka communities, such as Uelen, but is now experiencing a resurgence.



One major consequence of the collapse of the Chukotka economy in last 10-15 years has been the emigration of European Russians and the remarkable increase in subsistence activities.

economic basis of communities were reorganized—reindeer herding became a commodity enterprise; marine mammal products were not only used for nutrition, but also as the major food supply to the fox farms; and "cost free" sharing of wildlife resources, resources now "owned" by the state farm, was prohibited although this prohibition was often ignored.

During the last ten years, the indigenous communities of the Chukotka Peninsula have experienced another round of tremendous social and economic changes as a result of the collapse of the Soviet Union. Prior to this collapse, the central government provided substantial support to the Chukotka communities through subsidies and the centralized purchase and delivery of equipment, supplies, food, and fuel. This government support was provided primarily through the state farm system. Between 1989 and 1995, government support diminished to a fraction of its previous level, and the state farm system collapsed.

Few regions in the world have experi-

enced such complete economic collapse. Most enterprises and jobs created under the Soviet system disappeared. People who were fortunate enough to keep a job were often unpaid for months, or even years. Two major local industries, fox farming and reindeer herding, were decimated. Local production of milk and chickens, once a significant activity in the larger Chukotka settlements, disappeared. In addition, most government services, including essential services like power generation, health, and education are now being run on a survival basis.

One major consequence of the collapse of the Chukotka economy in last 10-15 years has been the emigration of European Russians and the remarkable increase in subsistence activities. At the end of the 1980s, subsistence activities provided about a quarter of the food products for rural villages. Today, subsistence activities provide over one-half of all food consumed and the

bulk of protein in an individual's diet. In 1999, flour, tea, tobacco, alcohol, and sugar were the only western products received by the smaller villages in the Chukotka region.

Recently indigenous communities have begun the difficult process of reestablishing more traditional forms of subsistence harvesting. Small whaling boats, prohibited between 1972 and 1990, now harvest gray and bowhead whales. And while twentieth century technology in the form of boats, motors, and guns has been adopted, many of the repressed cultural traditions such as sharing, status of hunters, traditional carving, and respect for elders are reemerging and showing increased prominence.

Beringia: Chukotka Subsistence Harvest Assessment Project

The three Chukotka communities selected, Lavrentiya, Lorino, and Sireniki, were thought to be representative of the

diversity extant within the region as a whole. Although there are significant differences among them, these three communities are characterized by dependence on wildlife resources, the reemergence of traditional practices and values, involvement in the wage and service sector, and diverse ethnic makeup. In addition they had all been differentially impacted by the demise of the state farms.

These three study communities have very different profiles with respect to population size, ethnic composition, and economic organization. Lavrentiya has a population of slightly fewer than 1,300 people, Lorino is slightly larger near 1,500 and Sireniki is the smallest with about 550 people.

All three communities have been characterized by selective emigration in the last five years. As the economic circumstances and living conditions have deteriorated, many Central Russian émigrés, initially drawn to the area by housing and wage

incentives, have repatriated to their Republics of origin. Lavrentiya with a substantial airport has acted as a regional transportation and service hub. It is the only community to sustain a substantial Russian ethnic presence (nearly a third of the population) although only about two-thirds of these respondents consider themselves to be permanent residents. In contrast, nearly all the Russian residents of Lorino and Sireniki consider themselves to be permanent members of the community

Survey Research

The Chukotka Subsistence Harvest Assessment Project conducted 400 survey research interviews in the study communities using a formal questionnaire. The questionnaire gathered detailed information about household composition, participation in subsistence activities, harvest assessments of every major species, the use of western foods, food costs, individual and household

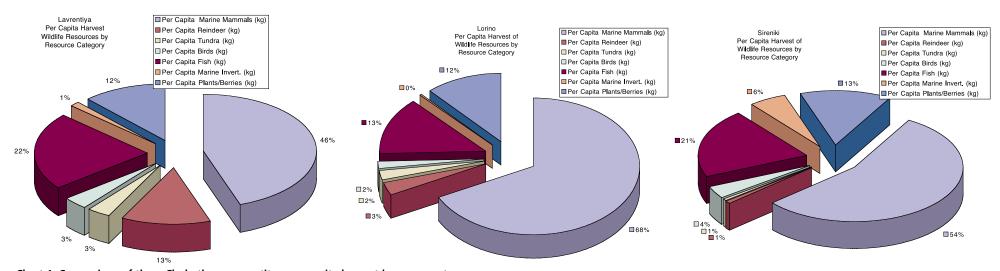


Chart 1. Comparison of three Chukotka communities: per capita harvest by resource type.